

page 13, line 36 to page 14, line 3). The remaining amendment to the specification is to correct an error in the fabric grip length. It is submitted no new matter has been added.

The Examiner has advanced a new rejection of the claims under 35 U.S.C.

§ 112, second paragraph, i.e., the claims are indefinite because there is no procedure in the claims for measuring or testing claimed properties. This rejection is respectfully traversed. Initially, it should be noted that the Examiner has cited no authority in support of this position. Secondly, a description of procedures for determining the two claimed values is set forth in the specification on page 13, lines 1-17. Because the conditions of the measurement are specified, the measured values of the load at 15% elongation and the tensile work that are obtained are reproducible, and therefore the claims are definite. Additionally, because the procedures are believed to be standard in the art, that is a further reason why inclusion in the claims is not required.

As an aid to the Examiner, the meanings of load at 15% elongation and tensile work at break in the present invention are further explained below.

In load at 15% tensile elongation, the values are obtained by a measurement according to the raveled strip method (ASTM D5035, copy attached). A stress-strain curve is drawn on a test piece having a width of 2.54 cm in which the test piece is stretched by gripping it 20 cm apart at a stretching speed of 20 cm/min in the length-wise direction. A load at 15% tensile elongation is a load value at 15% tensile elongation on the stress-strain curve; a load value at 15% elongation is a value in terms of N%/2.54/cm obtained by dividing stress at 15% elongation by 15%. The value represents the amount of force supporting the fabric at an intermediate deformation of

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the fabric well before breakage of the fabric. Accordingly, this value exhibits the degree of stiffness of fabric at deformation, while it is restraining the vehicle occupant.

The tensile work at break is an integrated value from the initiation of elongation to the breaking point in the stress-strain curve divided by the fabric grip length.

Accordingly, this value is represented in terms of N•%/2.54 cm. This value is a parameter representing toughness of fabric before rupture occurs. The greater the tensile work, the greater is the restraint of the occupant without rupture of the bag.

Claim 14 was rejected under 35 U.S.C. § 112, second paragraph, for use of the word "plan" in the term "plan view." This is a common term used in engineering drawing and generally means the top or horizontal view of an object. It is respectfully submitted that no amendment is needed.

Claims 9-16 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Mizuki et al. in view of Khandhadia et al., both of record. This rejection is also respectfully traversed. The Remarks presented in the Amendment filed March 26, 2002 are herein incorporated by reference.

The Examiner has failed to show any incentive or teaching in either cited patent to justify the proposed combination of the two. Mizuki et al. completely fails to disclose or suggest a woven fabric composed of polyamide fiber yarn containing a copper compound having a copper concentration of 30-200 ppm. Thus, no reason exists in Mizuki et al. to combine the two patents. Nor does any reason exist in Khandhadia et al. Yet the Examiner has combined the two patents without showing why this combination (in the absence of applicants' invention) would be desirable. The mere fact that prior art may be modified by an examiner does not make the modification obvious

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unless the prior art suggests the desirability of the modification. In re Fritch, 972 F.2d 1260, 23 U.S.P.Q.2d 1780 (Fed. Cir. 1992). The Examiner here has failed to make findings as to the reason a skilled artisan, with no knowledge of the claimed invention, would have been motivated to select the components of the two cited patents as desirable for combination in the manner claimed.

The absence of such findings is understandable from a consideration of just one feature of the present invention. The polyamide yarn is formed of a plurality of single filaments each having a fineness in a range of 1.0 to 3.3 decitex which are used to impart softness and compact foldability to the air bag. A single filament having a fineness in this range is susceptible to deterioration due to thermal aging. In the present invention, such deterioration of the polyamide fabric is suppressed by the incorporation of a copper compound in a specified amount. The disclosure of Mizuki et al. neither teaches nor suggests the concept of or means for suppressing thermal deterioration of polyamide fabric in an air bag. The disclosure of Khandhadia et al. would also not motivate Mizuki et al. to use the copper compound to prevent this thermal deterioration because a skilled artisan would not have selected Khandhadia et al. when it too is silent as to thermal deterioration of polyamide fabric used in an air bag. For this reason alone, the proposed combination of references must fail.

Additional patentable features include, inter alia, the measured values of load at 15% elongation and tensile work at break which the Examiner, based on an apparent misunderstanding of the law, has chosen to overlook. These are limitations found in the independent claims which, absent prior art that anticipates or makes obvious these limitations, cannot be ignored.

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The Examiner continues to rely heavily on In re Boesch and Slaney, 205 U.S.P.Q. 215 (CCPA 1980) in attempting to fix the shortcomings of the two cited references, even though this case has no relevance to the issues herein. The invention in Boesch and Slaney embraced the percentage composition of nickel base alloys. The two prior art patents on which the claims were rejected disclosed percentage composition of nickel-chromium alloys in one patent and nickel base alloys in the other patent. The court stated that each of the ranges of constituents of the claimed alloys overlapped ranges disclosed in the two prior art references. The court found that other prior art suggested the kind of experimentation necessary to achieve the claimed composition and compared it to the rule that discovery of an optimum value of a result effective variable in a known process is ordinarily within the skill of the art.

The facts and reasoning in Boesch and Slaney are inapposite to the facts at hand. No composition of metals or a recipe is set forth in the present claims. The prior art cited by the Examiner does not relate to compositions of matter. The present claims are directed to manufactures as are the disclosures of Mizuki et al. and Khandhadia et al. However, the disclosure of Mizuki et al. by the Examiner's own admission does not overlap the elements of the present claims. Nor does the disclosure of Khandhadia et al. which is directed to fabric coatings for reducing toxicity in an activated airbag. Thus, absent overlap, the optimization decision of Boesch and Slaney is irrelevant.

In conclusion, the Examiner has failed to make out a prima facie case for obviousness. The use of disparate references without making findings as to the reason a skilled artisan would have been motivated to combine them, the ignoring of claim limitations, and the citing of irrelevant case law are but examples of a rejection based

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only on hindsight. It is impermissible to use the claimed invention as an instruction manual or template to piece together the teachings of the prior art so that the claimed invention is rendered obvious. One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention. In re Fritch.

Reconsideration and allowance of claims 9-16 are earnestly solicited. If the Examiner wishes to have an interview before issuing an action in this case, he is requested to contact the undersigned attorney at 571.203.2750 or in his absence his secretary, Mrs. Clark, at 571.203.2419.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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PATENT
Customer No. 22,852
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:)
Yoshinori KAMI et al.) Group Art Unit: 1772
Application No.: 09/530,447) Examiner: M. Patterson
Filed: April 28, 2000)
For: AIR BAG)
)

Commissioner for Patents
Washington, DC 20231

Sir:

APPENDIX TO THE AMENDMENT FILED DECEMBER 2, 2002

IN THE SPECIFICATION:

Replace lines 10-18 of page 11 with the following paragraph:

In the present invention, yarn forming the woven fabric contains a copper compound selected from a group consisting of copper salt and a halogenated copper in a mixture with a halogenated alkaline metal as the stabilizing agents for improving the heat durability. The copper salt includes, for example, copper acetate, and the halogenated copper includes, for example, copper bromide. [In the present invention, woven fabrics composed of yarns containing copper salt (copper acetate, halogenated copper, copper bromide or others), halogenated alkaline metals or mixtures of various copper salts and organic bases as the stabilizing agents for improving the heat

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durability are used.] These copper compounds may be added to polyamide fibers in a known manner, such as added in a polymerization process of polyamide or incorporated into polymer chips.

Replace lines 5-21 of page 13 with:

The fabric tensile strength and elongation at break were measured by an AG 1000D manufactured by Shimadzu Seisakusho K.K., under the condition of a test piece width of 2.54 cm, a fabric grip length of [0.20] 20 cm and a stretching speed of 20 cm/min while adopting a raveled-strip method. The tensile work at break was an integrated value from the initiation to a breakage point in a tensile stress-strain curve obtained by this measurement divided by the fabric grip length and unit-converted to N•%/2.54 cm. A load at 15% elongation is a load value at 15% on the tensile stress-strain curve obtained by this measurement, which is then divided by 15 and unit-converted to N%/2.54 cm. The retention of resistance to heat was calculated by dividing a tensile strength value obtained in the above manner prior to a heat treatment of the fabric (at 110°C for 1000 hours) with a value after the heat treatment.

IN THE CLAIMS:

9. (Amended) An air bag formed of two woven fabrics interwoven with each other to be a bag-shaped body, each composed of polyamide fiber yarns containing a copper compound in a mixture of a halogenated alkali metal, the copper compound selected from a group consisting of a copper salt and a halogenated copper, and having a copper concentration in the range of 30 to 200 ppm, and the polyamide fiber yarns containing a plurality of single filaments each filament having a fineness in the range of

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1.0 to 3.3 decitex, wherein the product of fineness of the warp or weft of the fabric multiplied by the weave density of the fabric being not more than 16000 decitex•end or pick, respectively, /2.54 cm, the fabric having the load at 15% tensile elongation in the range of 3 to 35 N%/2.54 cm, and the tensile work at break in the range of 7000 to 30000 N•%/2.54 cm.

10. (Amended) An air bag formed of a woven fabric composed of polyamide fiber yarns containing a copper compound in a mixture of a halogenated alkali metal, the copper compound selected from a group consisting of a copper salt and a halogenated copper, and having a copper concentration in the range of 30 to 200 ppm, and the polyamide fiber yarns containing a plurality of single filaments each filament having a fineness in the range of 1 to 3.3 decitex, wherein the product of fineness of the warp or weft of the fabric multiplied by the weave density of the fabric being less than 16000 decitex•end or pick, respectively, /2.54 cm, the fabric having the load at 15% elongation in the range of 3 to 35 N%/2.54 cm and the tensile work at break in the range of 7000 to 30000 N•%/2.54 cm, the fabric being sewn or bonded to have a three dimensional contour.

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